UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,358	12/12/2003	Mohsen Abdollahi	NGC-145/000312-040	3532

32205 7590 04/19/2006

CARMEN B. PATTI & ASSOCIATES, LLC
ONE NORTH LASALLE STREET
44TH FLOOR
CHICAGO, IL 60602

EXAMINER	
TUCKER, WESLEY J	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,358	ABDOLLAHI ET AL.	
	Examiner	Art Unit	
	Wes Tucker	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,7-15 and 17-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7-15 and 17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's response filed January 18th 2006 in response to the last office action has been entered and made of record.

2. Applicant has amended claims 6-9. Claims 4, 5 and 16 have been canceled. Claims 1-3, 7-15, and 17-22 are currently pending.

3. Applicant's arguments have been found at least partially persuasive. However Applicant's remarks are now moot with the presentation of a new rejection in view of newly cited prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-9, 11, 14-15, 17-19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication US 2003/0044056 to Katt et al.

With regard to claim 1, Katt discloses an apparatus, comprising:

a computer component (Fig. 1, element 58) that receives one or more images of one or more packaging materials from one or more imaging components (Fig. 1, element 52);

Katt further discloses wherein the computer component employs one or more radiation components to emit one or more radiation wavelengths to the one or more packaging materials, wherein the computer component employs the one or more imaging devices to create the one or more images (Figs. 1 and 5 and paragraph 0025).

Katt further discloses wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (paragraph 0025).

Katt further discloses wherein the computer component employs one or more of the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for the transmittance through the one or more of the one or more packaging materials, wherein the one or more of the one or more radiation wavelengths reflect off a carrier of the one or more of the one or more of the one or more packaging materials to the one or more imaging devices (paragraph 0025). Katt discloses that the carrier tape is black so that the lighting is largely absorbed, but not completely absorbed. The light that is reflected is diffused by the packaging tape making the seal areas visible.

Katt further discloses wherein the computer component employs an analysis of the one or more images to make a determination of a package integrity of the one or more packaging materials (paragraph 0025)

With regard to claim 2, Katt further discloses the apparatus of claim 1, wherein the computer component employs one or more algorithms to conduct the analysis of one or more of the one or more images to make the determination of the package integrity of the one or more packaging materials (paragraph 0042).

With regard to claim 3, Katt discloses the apparatus of claim 1, wherein the one or more packaging materials comprise one or more seal regions,

wherein the package integrity comprises a seal region integrity (paragraph 0042),

wherein the computer component employs the analysis of the one or more images to make the determination of the seal region integrity of the one or more seal regions (paragraph 0042).

With regard to claim 6, Katt discloses the apparatus of claim 1, wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (paragraph 0025),

wherein the computer component employs one or more of the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for a transmittance through one of more of the one or more packaging

materials; wherein the one or more of the one or more radiation wavelengths transmit directly through the one or more of the one or more packaging materials to the one or more imaging devices (Fig. 5, elements 41 and 104 and paragraph 0025).

With regard to claim 7, Katt discloses the apparatus of claim 1, wherein one or more of the one or more packaging materials allow a reflection of the one or more radiation wavelengths (paragraph 0025);

wherein the computer component employs one or more of the one or more irradiation components to emit the one or more radiation wavelengths at an incident angle to the one or more of the one or more packaging materials (Fig. 5, elements 104);

wherein upon the rejection of one or more of the one or more radiation wavelengths at an angle equal to the incident angle, the computer component employs the analysis to identify one or more dark regions in the one or more images, wherein the one or more dark regions indicate the package integrity to the computer component (paragraph 0025). The dark regions are the seal and determine the package integrity.

With regard to claim 8, Katt discloses the apparatus of claim 1, wherein one or more of the one or more packaging materials allow a reflection of the one or more radiation wavelengths (paragraph 0025). The diffusion of the light through the lighter colored packaging tape is interpreted as allowing a reflection.

Katt further discloses wherein the computer component employs one or more of the one or more irradiation components to emit the one or more radiation wavelengths

at a low incident angle to the one or more of the one or more packaging materials (Fig. 5, elements 104);

Katt further discloses wherein upon the reflection of one or more of the one or more radiation wavelengths different from the low incident angle, the computer component employs the analysis to identify one or more bright regions in the one or more images, wherein the one or more bright regions indicate the package integrity to the computer component (paragraph 0025). Katt discloses that the dark region is the seal and the lighter surrounding areas is where the seal is not and is therefore interpreted as one or more bright regions.

With regard to claim 9, Katt discloses the apparatus of claim 1, wherein the computer component employs the one or more irradiation components to emit one or more of the one or more radiation wavelengths through one or more optical components (Fig. 5, elements 104). Here the light sources are interpreted as being emitted through glass, both the light source and the glass are interpreted as optical components.

With regard to claim 11, Katt discloses the apparatus of claim 9, wherein the computer component employs the one or more of the one or more irradiation components and the one or more optical components to create the one or more of the one or more radiation wavelengths, wherein the one or more of the one or more radiation wavelengths contact one or more of the one or more packaging materials (paragraph 0025).

With regard to claim 14, Katt discloses the apparatus of claim 1, wherein the computer component receives the one or more images of the one or more packaging materials from the one or more imaging components to perform an automated inspection of the package integrity of the one or more packaging materials (Fig. 5, element 58).

With regard to claim 15, Katt discloses a method, comprising the steps of:

employing one or more irradiation components to emit one or more radiation wavelengths to one or more packaging materials wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths, wherein the one or more imaging devices create the one or more images of the one or more packaging materials (paragraph 0025);

receiving one or more images of the one or more packaging materials from one or more imaging components (Fig. 5, elements 52 and 58); and

employing one or more analysis algorithms on the one or more images to make a determination of a package integrity of the one or more packaging materials (paragraph 0042);

wherein the step of receiving the one or more images of the one or more packaging materials from the one or more imaging components comprises steps of:

employing the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for the transmittance through the one or more packaging materials (paragraph 0025); and

receiving the one or more images from the one or more imaging devices upon a reflection of the one or more of the one or more radiation wavelengths off a carrier of the one or more packaging materials to the one or more imaging devices (paragraph 0025 and fig. 1, elements 52 and 58).

With regard to claim 17, Katt discloses the method of claim 15, wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (paragraph 0025), wherein the one or more imaging devices create the one or more images of the one or more packaging materials (Fig. 1, element 52), wherein the step of receiving the one or more images of the one or more packaging materials from the one or more imaging components comprises the steps of:

employing the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for the transmittance through the one or more packaging materials (paragraph 0025); and

receiving the one or more images from the one or more imaging devices images upon the transmittance of the one or more of the one or more radiation wavelengths through the one or more packaging materials to the one or more imaging devices (Fig. 1, element 52).

With regard to claim 18, Katt discloses the method of claim 15, wherein the one or more packaging materials allow a reflection of the one or more radiation wavelengths (paragraph 0025), wherein the step of employing the one or more analysis algorithms on the one or more images to make the determination of the package integrity of the one or more packaging materials comprises the steps of:

employing the one or more irradiation components to emit the one or more radiation wavelengths at an incident angle to the one or more packaging components (Fig. 5, elements 104),

receiving the one or more images from the one or more imaging devices upon the reflection of one or more of the one or more radiation wavelengths at an angle equal to the incident angle (Fig.5, elements 104). Here the reflected angle off a flat surface is interpreted as equivalent to the incident angle.

Katt further discloses employing the one or more analysis algorithms to identify one or more dark regions of the one or more images (paragraph 0025), and

employing the one or more dark regions of the one or more images to make the determination of the package integrity to the computer component (paragraph 0042).

With regard to claim 19, Katt discloses the method of claim 15, wherein the one or more packaging materials allow a reflection of the one or more radiation wavelengths, wherein the step of employing the one or more analysis algorithms on the

one or more images to make the determination of the package integrity of the one or more packaging materials comprises the steps of:

employing one or more of the one or more irradiation components to emit the one or more radiation wavelengths at a low incident angle to the one or more packaging components (Fig. 5, element 104);

receiving the one or more images from the one or more imaging devices upon the reflection of one or more of the one or more radiation wavelengths at an angle different from the incident angle (Fig. 5, elements 104 and 100); and

employing the one or more analysis algorithms to identify one or more bright regions of the one or more images (paragraph 0042),

employing the one or more bright regions of the one or more images to make the determination of the package integrity to the computer component (paragraphs 0025 and 0042).

With regard to claim 21, Katt discloses a method comprising the steps of:

Employing one or more irradiation components to emit one or more radiation wavelengths to one or more packaging materials, wherein the one or more irradiation components comprise one or more fluorescing excitation sources (paragraph 0025, Fig. 5, element 104),

Receiving one or more images of the one or more packaging materials from one or more imaging components (Fig. 1, elements 52 and 58); and

Employing one or more analysis algorithms on the one or more images to make a determination of a package integrity of the one or more packaging materials (paragraphs 0025 and 0042).

Katt further discloses employing a first optical component to allow a transmittance of one or more of the one or more radiation wavelengths from the one or more fluorescing excitation sources through the one or more packaging materials (Fig. 1, elements 104 and paragraph 0025). Here optical components are interpreted as the assembly including a light source and light transmissive sections.

Katt further discloses employing a second optical component to allow one or more fluorescing wavelengths emitted by the one or more packaging materials to pass through to the one or more imaging devices (Fig. 1, element 52 and Fig. 5, element 100). Optical components are considered inherent in the cameras.

8. Claims 10, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent Publication US 2003/0044056 to Katt et al., U.S. Patent 6,301,380 to Mullins et al., and US Patent Publication 2003/0161524 to King.

With regard to claim 10, Katt discloses a computer component (Fig. 1, element 58) that receives one or more images of one or more packaging materials from one or more imaging components (Fig. 1, element 52);

Katt further discloses wherein the computer component employs one or more radiation components to emit one or more radiation wavelengths to the one or more packaging materials, wherein the computer component employs the one or more imaging devices to create the one or more images (Figs. 1 and 5 and paragraph 0025).

Katt further discloses wherein the computer component employs the one or more irradiation components to emit one or more of the one or more radiation wavelengths through one or more optical components (Fig. 5, elements 104).

Katt further discloses wherein the computer component employs an analysis of the one or more images to make a determination of a package integrity of the one or more packaging materials (paragraph 0025)

Katt further discloses wherein the one or more packaging materials allow a transmittance of one or more of the one or more radiation wavelengths (paragraph 0025).

Katt further discloses wherein the computer component employs one or more of the one or more irradiation components to emit the one or more of the one or more radiation wavelengths for the transmittance through the one or more of the one or more packaging materials, wherein the one or more of the one or more radiation wavelengths reflect off a carrier of the one or more of the one or more of the one or more packaging materials to the one or more imaging devices (paragraph 0025). Katt discloses that the carrier tape is black so that the lighting is largely absorbed, but not completely absorbed. The light that is reflected is diffused by the packaging tape making the seal areas visible.

Katt does not explicitly discloses wherein the packaging materials have graphics and the absorption spectrum of the graphics is filtered out.

Mullins discloses wherein one or more of the one or more packaging materials comprise one or more graphics, wherein the computer component employs one or more of the one or more imaging devices to determine one or more absorption spectrums of the one or more graphics (column 3, lines 22-32). Mullins teaches that learning the patterns created by printing or graphics on a transparent packaging material enables the system to determine defects while considering the printed matter. Therefore it would have been obvious to one of ordinary skill in the art to determine the impact of printed graphics on packaging material in order to better inspect the packaging material for defects.

Katt and Mullins do not explicitly disclose the feature of filtering out the spectrum of the graphics.

However, King discloses filtering a certain spectrum of light so as not to admit certain light to the imager in order to better inspect the transparent packaging material. Therefore in the combination of Katt and Mullins it would have been obvious to one of ordinary skill in the art at the time of invention to use the filter of King to eliminate the absorption spectrum of the graphics of Mullins in order for the imager to acquire an image with a minimum impact from the graphics on the transparent packaging materials.

King teaches that one or more such filters can be used to illuminate an object being inspected to filter out different spectrums of light in order to make certain features more visible or less visible (paragraphs 0020, 0021, 0026).

Therefore it would have been obvious to one of ordinary skill in the art a the time of invention to use the band-pass filters as taught by King in combination with the graphics learning method of Mullins in order to filter out the graphics and in combination with the color sensitive tape of Katt to illuminate the inspection area with wavelengths that enable better inspection of the tape.

With regard to claim 20, the discussion of claim 10 applies.

With regard to claim 22, Katt discloses an article comprising one or more computer-readable signal-bearing media (Fig. 1, element 58);

Means in the one or more media for employing one or more irradiation wavelengths to one or more packaging materials (paragraph 0025), and

means in the one or more media for receiving one or more images of the one or more packaging materials from one or more imaging components (Fig. 1, elements 58 and 52).

Katt does not explicitly disclose wherein the one or more packaging materials comprise one or more graphics or means in the one or more media for employing the

one or more imaging devices to determine one or more absorption spectrums of the one or more graphics; and

Mullins discloses a wherein one or more of the one or more packaging materials comprise one or more graphics, wherein the computer component employs one or more of the one or more imaging devices to determine one or more absorption spectrums of the one or more graphics (column 3, lines 22-32). Mullins teaches that learning the patterns created by printing or graphics on a transparent packaging material enables the system to determine defects while considering the printed matter. Therefore it would have been obvious to one of ordinary skill in the art to determine the impact of printed graphics on packaging material in order to better inspect the packaging material for defects.

Katt and Mullins do not explicitly disclose the feature of filtering out the spectrum of the graphics.

However, King discloses filtering a certain spectrum of light so as not to admit certain light to the imager in order to better inspect the transparent packaging material. Therefore in the combination of Katt and Mullins it would have been obvious to one of ordinary skill in the art at the time of invention to use the filter of King to eliminate the absorption spectrum of the graphics of Mullins in order for the imager to acquire an image with a minimum impact from the graphics on the transparent packaging materials.

King teaches that one or more such filters can be used to illuminate an object being inspected to filter out different spectrums of light in order to make certain features more visible or less visible (paragraphs 0020, 0021, 0026).

Therefore it would have been obvious to one of ordinary skill in the art a the time of invention to use the band-pass filters as taught by King in combination with the graphics learning method of Mullins in order to filter out the graphics and in combination with the color sensitive tape of Katt to illuminate the inspection area with wavelengths that enable better inspection of the tape.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent Publications US 2003/0044056 to Katt et al. and US 2003/0161524 to King.

With regard to claim 12, Katt discloses an apparatus, comprising:

a computer component (Fig. 1, element 58) that receives one or more images of one or more packaging materials from one or more imaging components (Fig. 1, element 52);

Katt further discloses wherein the computer component employs one or more radiation components to emit one or more radiation wavelengths to the one or more packaging materials, wherein the computer component employs the one or more imaging devices to create the one or more images (Figs. 1 and 5 and paragraph 0025).

Katt further discloses wherein the computer component employs the one or more irradiation components to emit one or more of the one or more radiation wavelengths through the one or more optical components (paragraph 0025 and Fig. 5, elements 104).

Katt further discloses wherein the computer component employs an analysis of the one or more images to make a determination of a package integrity of the one or more packaging materials (paragraph 0025)

Katt discloses wherein the one or more of the one or more irradiation components comprise one or more fluorescing excitation sources (Fig. 5, elements 104). Katt also discloses wherein one or more compounds within the one or more of the one or more packaging materials react to the one or more of the one or more fluorescing excitation sources, wherein the one or more compounds emit one or more fluorescing wavelengths (paragraph 0025). Katt discloses that the packaging tape reacts to certain color or wavelength specific light. The compound that reacts is therefore interpreted as the dye that causes it to have a light color or diffuse the light to appear lighter than the carrier tape.

Katt but does not explicitly disclose wherein the one or more optical components comprise a first band-pass filters, wherein the first band pass filter allows the one or more of the one or more radiation wavelengths of the one or more fluorescing excitation sources to pass through to one or more of the one or more packaging materials; or wherein the one or more optical components comprise a second band-pass filters,

wherein the second band-pass filter allows the one or more fluorescing wavelengths to pass through to the one or more imaging devices.

King teaches that one or more such filters can be used to illuminate an object being inspected to filter out different spectrums of light in order to make certain features more visible or less visible (paragraphs 0020, 0021, 0026).

Therefore it would have been obvious to one of ordinary skill in the art a the time of invention to use the band-pass filters as taught by King in combination with the color sensitive tape of Katt to illuminate the inspection area with wavelengths that enable better inspection of the tape.

10. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent Publications US 2003/0044056 to Katt et al. and U.S. Patent 4,747,299 to Fox et al.

With regard to claim 13, Katt discloses the apparatus of claim 1, wherein the computer component employs and analysis to determine package integrity by receiving images (paragraph 0025 and Figs. 1 and 5).

Katt also discloses manipulating the packaging material (paragraph 0018).

Katt does not disclose wherein the computer component employs one or more material handling components to cause one or more deformations in one or more of the one or more packaging materials; and wherein the computer component receives one or more images of the one or more deformations from the one or more imaging

components, wherein the computer component employs an analysis of the one or more deformations to make a determination of the package integrity of the one or more of the one or more packaging materials.

Fox discloses a method of testing a package seal by causing a deformation or pressure differential in order to test the integrity of the package seal (column 1, lines 43-65). Fox teaches that these kinds of seals are abundant in a variety of forms especially in perishable food products and the like (column 2, lines 42-49). In mechanically deforming package seals of this nature it becomes more evident that the seal lacks integrity. Therefore it would have been obvious to one of ordinary skill in the art to deform the sealed package as taught by Fox in the imaging apparatus of Katt in order to better determine the package integrity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 571-272-7427. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-2214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wes Tucker

4-6-06

Matthew C. Bella

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600